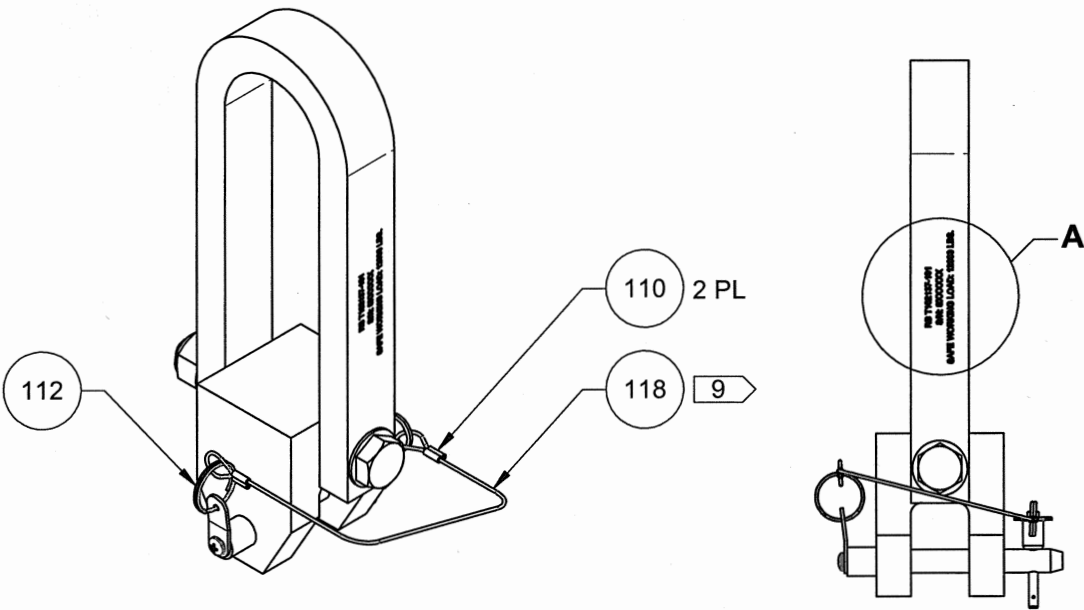


ITEM #	QTY	PART #	PART TITLE
-103	1	RB T102137-101-103	STRAP
-105	1	RB T102137-101-105	PIN
-107	1	RB T102137-101-107	SLEEVE
-109	1	RB T102137-101-109	CLEVIS
110	2	McMaster#3896T31 OR EQUIV.	ALUMINUM WIRE ROPE COMPRESSION SLEEVE 1/16" DIA. X 3/8" LG.
111	1	McMaster#90630A165 OR EQUIV.	GRADE 8 STEEL NYLON INSERT LOCKNUT 5/8"-18 X 3/4" HT.
112	1	McMaster#90905A655 OR EQUIV.	316 SS SPLIT RING 15/16" ID. X 1-1/16" OD. X 1/8" THK.
113	1	McMaster#91772A826 OR EQUIV.	18-8 SS PHILLIPS PAN HEAD SCREW #10-32 X 5/16" LG.
114	1	McMaster#97840A460 OR EQUIV.	18-8 SS TAB FOR WIRE ROPE LANYARD 1.40" LG. X 1/2" WIDTH. X 1/16" THK.
115	1	AN10-47A	BOLT
116	2	NAS1149F1063P	WASHER
117	1	NAS1333S6S10D	QUICK RELEASE PIN
118	1	CARR-LANE#CL-2-C	NYLON COATED STEEL LANYARD 1/16" DIA.



RB T102137-101 LIFTING TOOL

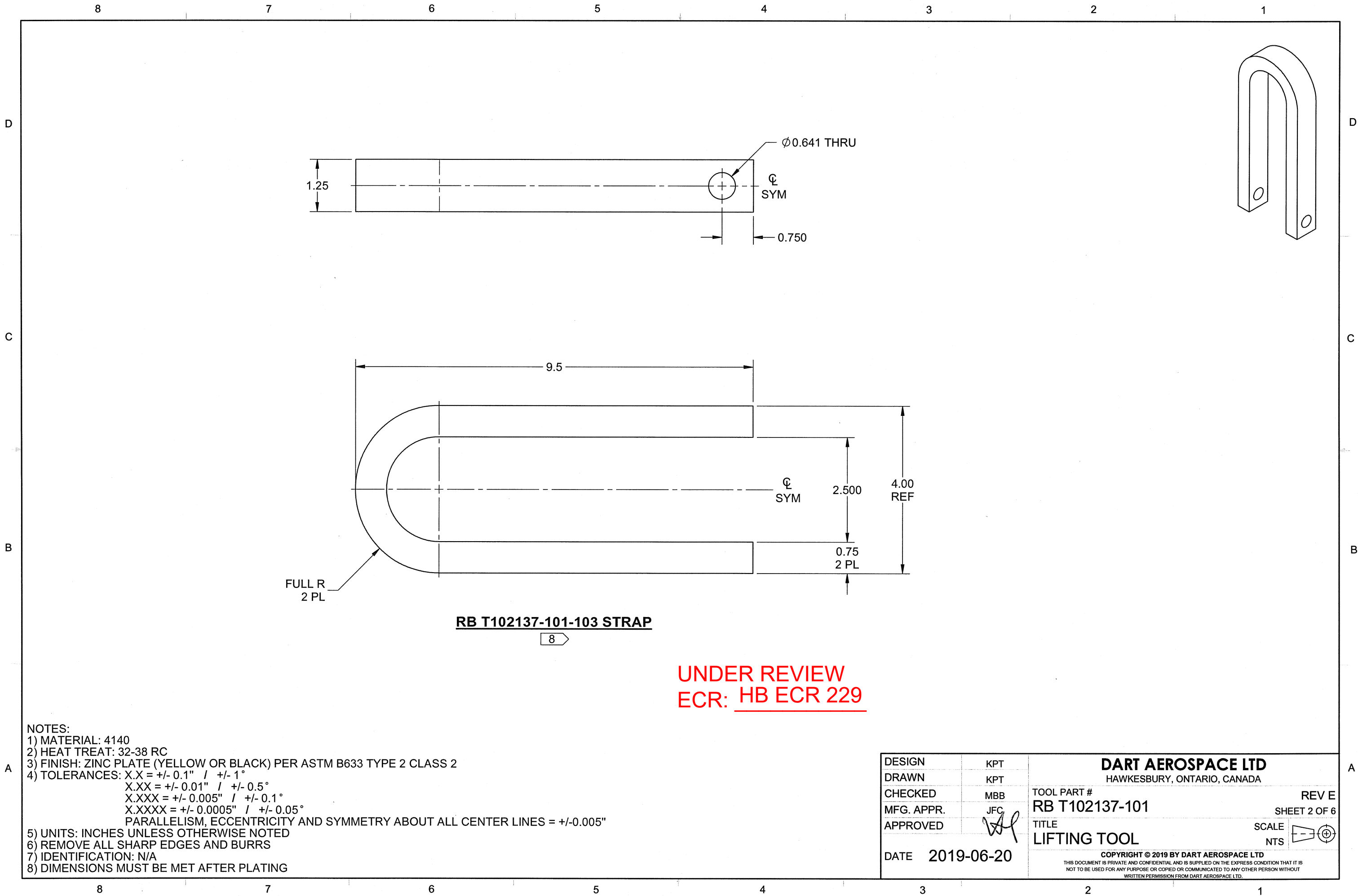
RB T102137-101
SN: SXXXXX
SAFE WORKING LOAD: 12000 LBS.

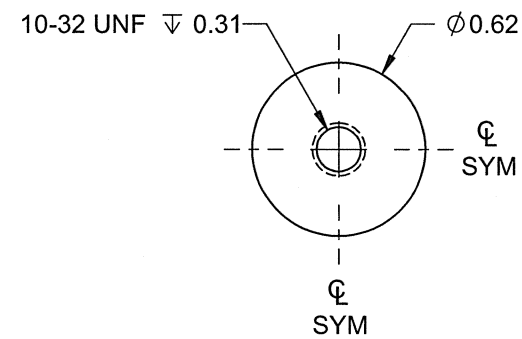
DETAIL A

- NOTES:
- 1) MATERIAL: N/A
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
 - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 6) IDENTIFICATION: LASER ENGRAVE, AS SHOWN
 - 7) ASSEMBLE AS SHOWN
 - 8) TIGHTEN NUT UNTIL CONTACTS SURFACE, ENSURE 1-4 THREADS IN SAFETY
 - 9) ASSEMBLED LANYARD LENGTH MUST BE 10" +/- 1", LANYARD MUST MOVE FREELY WHEN INSTALLING/REMOVING ITEM 117
 - 10) APPLY RED THREADLOCKER LOCTITE 263/262 ON THREADS OF ITEM 113 THEN ASSEMBLE WITH ITEM -105, AND REMOVE EXCESS
 - 11) INSTALL ITEM 113 HAND TIGHT
 - 12) THE TOOL ASSY MUST BE PACKAGED WITH A DESICCANT BAG INTO A TIGHT FITTING SEALED PLASTIC BAG

UNDER REVIEW
ECR: HB ECR 229

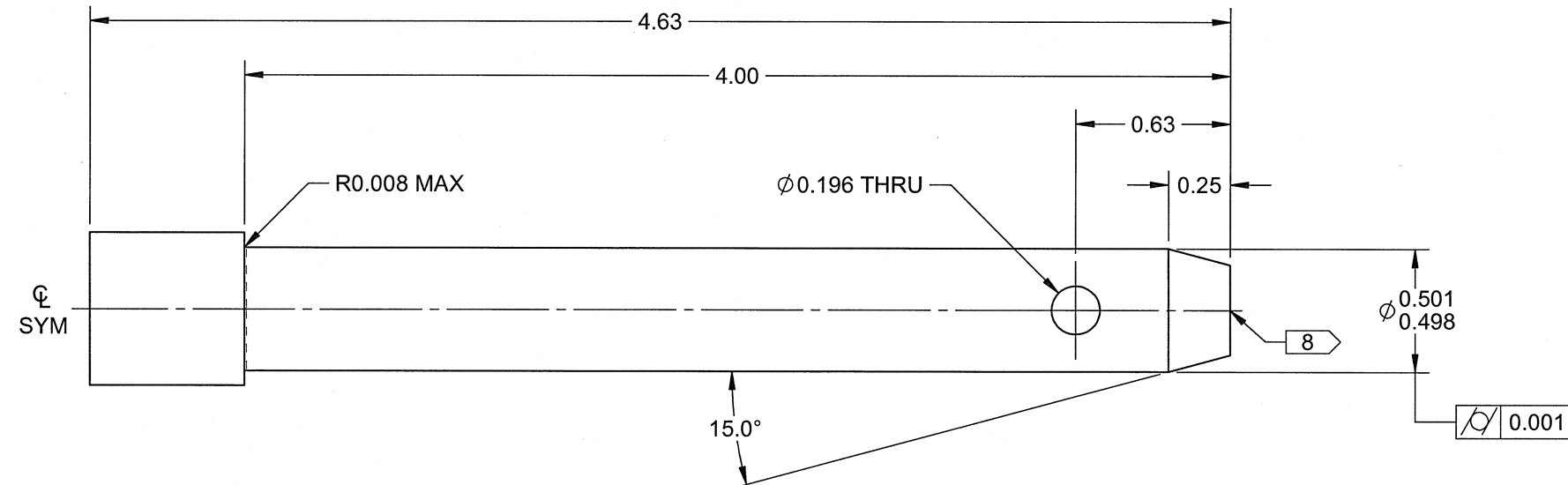
SEE PREVIOUS REVISION FOR MORE INFORMATION UPDATED DRAWING TEMPLATE ITEM -111 WAS NAS6610-64 IS ITEM 115 AN10-47A ITEM -113 WAS MS20002C10 IS ITEM 116 NAS1149F1063P ITEM -115 WAS NAS1291-10 IS ITEM 111 McMaster#90630A165 OR EQUIV. ITEM -117 WAS MS35206-267 IS ITEM 113 McMaster#91772A826 OR EQUIV. ITEM -121 WAS NAS1333S6S100 IS ITEM 117 NAS1333S6S10D. REMOVED ITEMS -119, -123, AND -125 -103 FINISH WAS CAD PLATE YELLOW IS ZINC PLATE YELLOW. DIM WAS Ø.6260-.6245 IS Ø0.641. REMOVED ENGRAVING NOTES AND 0.625 DIM. -105 MATERIAL WAS 4140 IS O1. FINISH WAS CAD PLATE YELLOW IS ZINC PLATE YELLOW. HEAT TREAT WAS RC 46-50 IS 48-52 RC. DIM WAS Ø.194 IS Ø0.196. DIM WAS 10-24 UNC ▽ .50 IS 10-32 UNF ▽ 0.31. REMOVED .63 DIM. ADDED R0.008 MAX AND 4.00 DIMS. ADDED CYLINDRICITY GD&T TOLERANCE. -107 MATERIAL WAS 4130 IS 4140. FINISH WAS CAD PLATE YELLOW IS ZINC PLATE YELLOW. HEAT TREAT WAS RC 32-37 IS 32-38 RC. DIM WAS Ø.627+.000/-0.002 IS Ø0.641. DIM WAS 2.500+.000/-0.010 IS 2.493-2.488. -109 FINISH WAS CAD PLATE YELLOW IS ZINC PLATE YELLOW. DIM WAS 2.38 IS 2.493-2.488. DIM WAS Ø.504-.501 IS Ø0.510-0506. REMOVED .25, Ø.086 ▽ 1.0, 2.00, 1.19, .629, AND 1.38 DIMS. REMOVED ENGRAVING NOTE.		19-743 KPT	
REV.	DESCRIPTION	ECN #	BY
DESIGN	KPT	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	MBB	TOOL PART # RB T102137-101	
MFG. APPR.	JFC		
APPROVED	WY	TITLE LIFTING TOOL	
DATE	2019-06-20		
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RB T102137-101-105 PIN

9



UNDER REVIEW
ECR: HB ECR 229

- NOTES:
- 1) MATERIAL: O1
 - 2) HEAT TREAT: 48-52 RC
 - 3) FINISH: ZINC PLATE (YELLOW OR BLACK) PER ASTM B633 TYPE 2 CLASS 2
 - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
 - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 6) REMOVE ALL SHARP EDGES AND BURRS
 - 7) IDENTIFICATION: N/A
 - 8) CENTER DRILL IS ACCEPTABLE
 - 9) DIMENSIONS MUST BE MET AFTER PLATING

DESIGN	KPT	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	MBB	TOOL PART #	REV E
MFG. APPR.	JFC	RB T102137-101	SHEET 3 OF 6
APPROVED		TITLE	SCALE
		LIFTING TOOL	NTS
DATE	2019-06-20	COPYRIGHT © 2019 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

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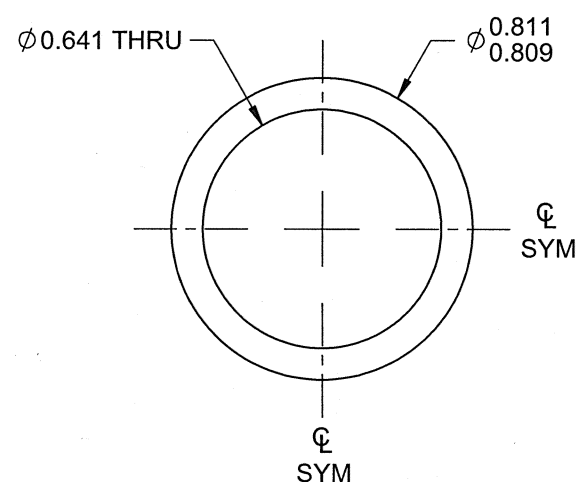
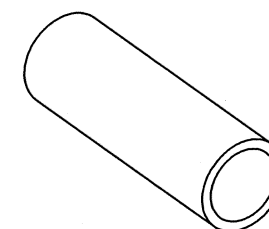
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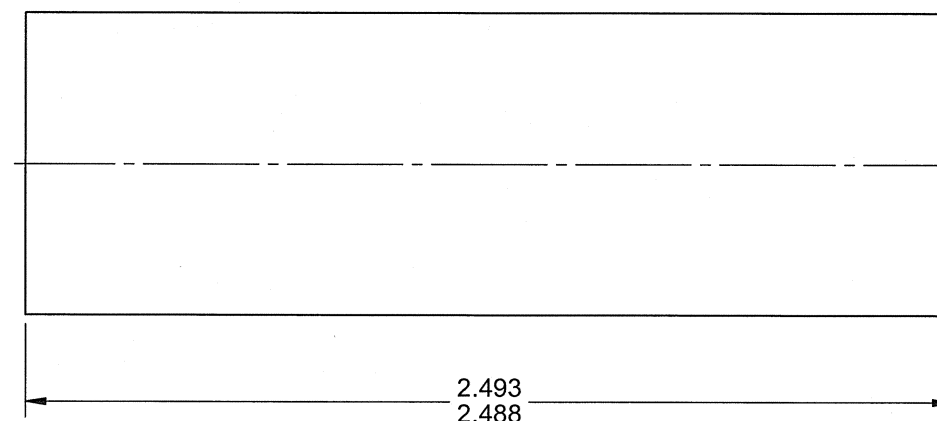
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**RB T102137-101-107 SLEEVE**

8



UNDER REVIEW
ECR: HB ECR 229

NOTES:

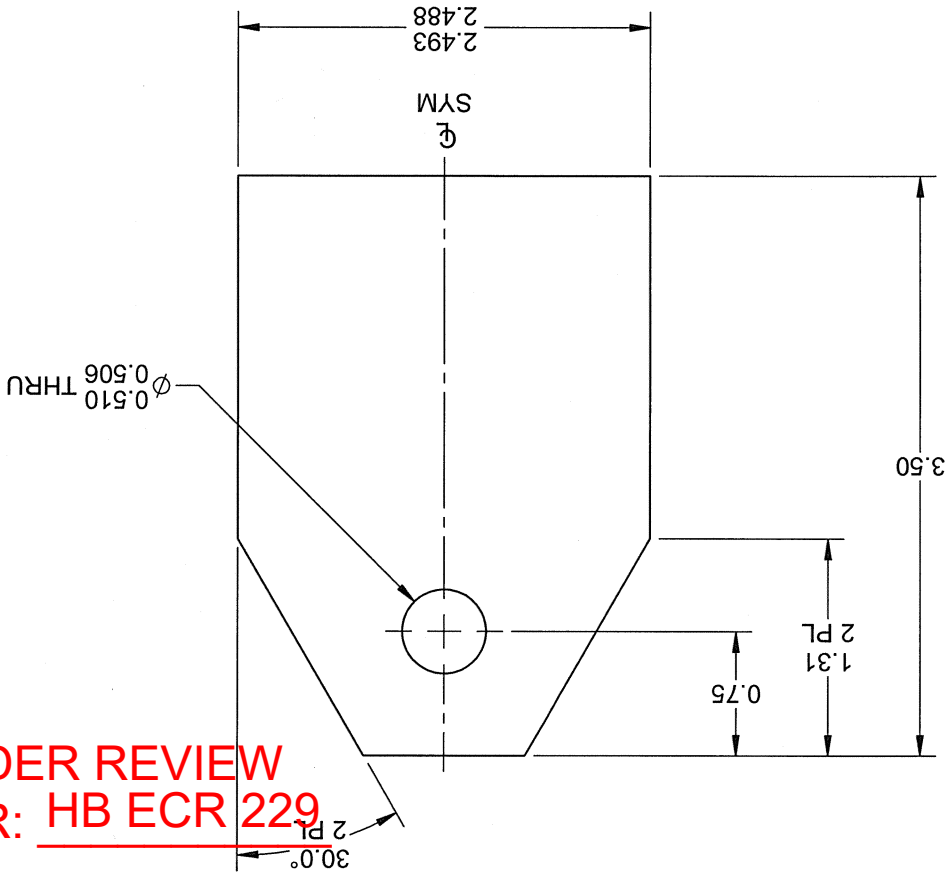
- 1) MATERIAL: 4140
- 2) HEAT TREAT: 32-38 RC
- 3) FINISH: ZINC PLATE (YELLOW OR BLACK) PER ASTM B633 TYPE 2 CLASS 2
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES AND BURRS
- 7) IDENTIFICATION: N/A
- 8) DIMENSIONS MUST BE MET AFTER PLATING

DESIGN	KPT	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	MBB	TOOL PART #	REV E
MFG. APPR.	JFC	RB T102137-101	SHEET 4 OF 6
APPROVED		TITLE	SCALE
		LIFTING TOOL	NTS
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- NOTES:
- 1) MATERIAL: 4140
 - 2) HEAT TREAT: 32-38 RC
 - 3) FINISH: ZINC PLATE (YELLOW OR BLACK) PER ASTM B633 TYPE 2 CLASS 2
 - 4) TOLERANCES: X.X = ± 0.01 " / $\pm 1^\circ$
X.XX = ± 0.01 " / $\pm 0.5^\circ$
X.XXX = ± 0.005 " / $\pm 0.1^\circ$
X.XXXX = ± 0.0005 " / $\pm 0.05^\circ$
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = ± 0.005 "
 - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 6) REMOVE ALL SHARP EDGES AND BURRS
 - 7) IDENTIFICATION: N/A
 - 8) DIMENSIONS MUST BE MET AFTER PLATING

PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = ± 0.005 "

RB T102137-101-109 CLEVIS



DESIGN	KPT	DATE	2019-06-20
DRAWN	KPT		
CHECKED	MBB		
MFG. APPR.	JFC		
APPROVED			

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

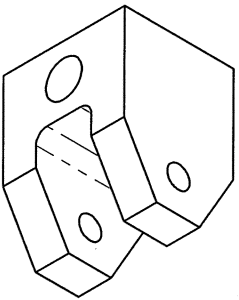
TOOL PART #
RB T102137-101

TITLE
LIFTING TOOL

SCALE
NTS

REV E
SHEET 5 OF 6

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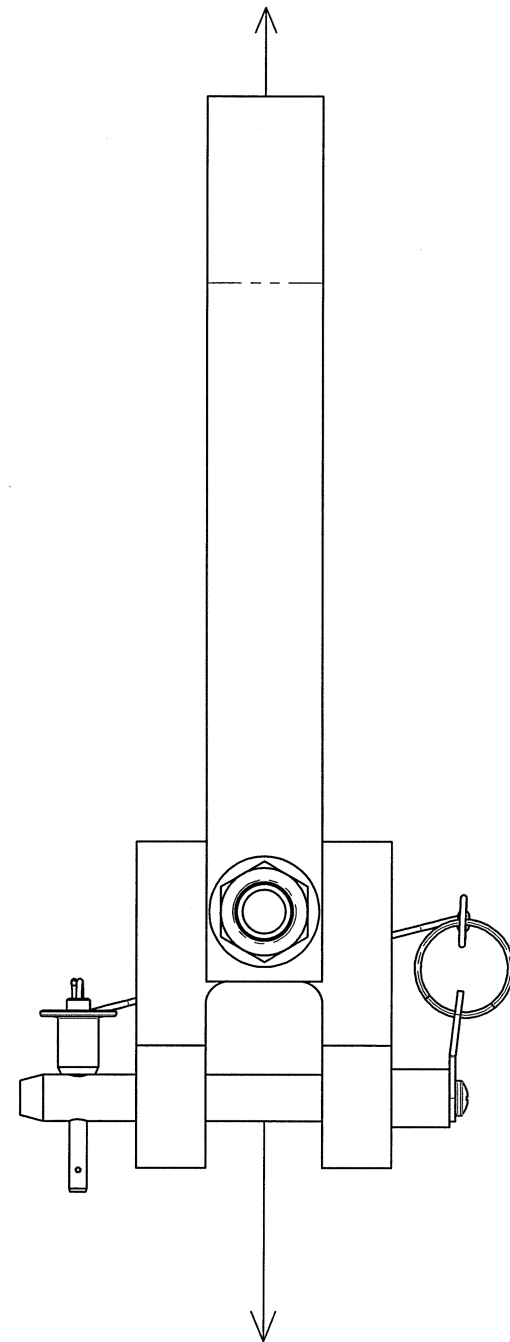


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10909 KG / 24000 LBS

FIRST ARTICLE WEIGHT TEST

1. AFTER INSPECTION, PLACE LIFTING TOOL IN AN APPROPRIATE FIXTURE AND USE THE QUICK RELEASE PIN TO LOCK THE PIN INTO PLACE. ATTACH THE LIFTING TOOL TO AN APPROPRIATE TEST WEIGHT OF 10909 KG / 24000 LBS.
2. LIFT WEIGHT FOR AT LEAST 5 MINUTES, CONTINUALLY CHECKING FOR CRACKS, DEFLECTION, OR DISTORTION
3. REMOVE WEIGHT AND RE-INSPECT TOOL, CHECKING FOR STRESS CRACKS, BENDING, OR DISTORTIONS.

INSPECTOR: _____

TESTER: _____

S/N: _____

DATE: _____

UNDER REVIEW
ECR: HB ECR 229

DESIGN	KPT	DART AEROSPACE LTD	
DRAWN	KPT	HAWKESBURY, ONTARIO, CANADA	
CHECKED	MBB	TOOL PART #	REV E
MFG. APPR.	JFC	RB T102137-101	SHEET 6 OF 6
APPROVED		TITLE	SCALE
		LIFTING TOOL	NTS 
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D

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